IN THE CLAIMS

Please amend the claims as follows.

1.   (Currently Amended)   A data processor comprising:

[[C]] a plurality of execution clusters, each of said [[C]] execution clusters comprising an instruction execution pipeline having [[N]] a plurality of processing stages capable of executing instruction bundles each comprising [[from]] one [[to S]] or more syllables, wherein each of said instruction execution pipelines is [[L]] a plurality of lanes wide, each of said [[L]] lanes capable of receiving one or more of said one to S syllables of said instruction bundles;

an instruction cache capable of storing a plurality of cache lines, each of said cache lines comprising [[C*L]] a plurality of the syllables;

an instruction issue unit capable of receiving fetched ones of said plurality of cache lines and issuing complete instruction bundles toward said [[C]] execution clusters, wherein at least one complete instruction bundle is issued having an out-of-order alignment; and

alignment and dispersal circuitry capable of receiving said complete instruction bundles from said instruction issue unit and routing each of said received complete instruction bundles to a correct one of said [[C]] execution clusters as a function of at least one address bit associated with each of said complete instruction bundles, the alignment and dispersal circuitry also capable of reordering each of the at least one complete instruction bundle having the out-of-order alignment so as to align the syllables in the complete instruction bundle with correct ones of the lanes

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~~wherein C, N, S, and L each represents an integer value greater than one~~.

2.   (Previously Presented)   The data processor as set forth in Claim 1 wherein said alignment and dispersal circuitry routes each of said received complete instruction bundles to said correct execution cluster as a function of at least one address bit associated with at least one syllable in each of said complete instruction bundles.

3.   (Previously Presented)   The data processor as set forth in Claim 1 wherein said alignment and dispersal circuitry routes each of said received complete instruction bundles to said correct execution cluster as a function of a cluster bit associated with each of said complete instruction bundles.

4.   (Previously Presented)   The data processor as set forth in Claim 1 wherein said alignment and dispersal circuitry routes each of said received complete instruction bundles to said correct execution cluster as a function of a stop bit associated with at least one syllable in each of said complete instruction bundles.

5.   (Currently Amended)   The data processor as set forth in Claim 1 wherein said alignment and dispersal circuitry comprises multiplexer circuitry capable of routing each of said received complete instruction bundles to any one of said [[C]] execution clusters.

6.   (Original)   The data processor as set forth in Claim 5 wherein said alignment and dispersal circuitry comprises control logic circuitry capable of controlling said multiplexer circuitry.

7.   (Previously Presented)   The data processor as set forth in Claim 6 wherein said control logic circuitry controls said multiplexer circuitry as a function of at least one of:

1) said at least one address bit associated with each of said complete instruction bundles;

2) at least one address bit associated with at least one syllable in each of said complete instruction bundles; and

3) a cluster bit associated with each of said complete instruction bundles.

8.   (Currently Amended)   The data processor as set forth in Claim 1 wherein [[L=4]] each execution pipeline is four lanes wide.

9.   (Currently Amended)   The data processor as set forth in Claim 1 wherein [[C=3]] the data processor comprises three execution units.

10.   (Currently Amended)   A processing system comprising:

a data processor;

a memory coupled to said data processor; and

a plurality of memory-mapped peripheral circuits coupled to said data processor for performing selected functions in association with said data processor;

wherein said data processor comprises:

[[C]] a plurality of execution clusters, each of said [[C]] execution clusters comprising an instruction execution pipeline having [[N]] a plurality of processing stages capable of executing instruction bundles each comprising [[from]] one [[to S]] or more syllables, wherein each of said instruction execution pipelines is [[L]] a plurality of lanes wide, each of said [[L]] lanes capable of receiving one or more of said one to S syllables of said instruction bundles;

an instruction cache capable of storing a plurality of cache lines, each of said cache lines comprising [[C*L]] a plurality of the syllables;

an instruction issue unit capable of receiving fetched ones of said plurality of cache lines and issuing complete instruction bundles toward said [[C]] execution clusters, wherein at least one complete instruction bundle is issued having an out-of-order alignment; and

alignment and dispersal circuitry capable of receiving said complete instruction bundles from said instruction issue unit and routing each of said received complete instruction bundles to a correct one of said [[C]] execution clusters as a function of at

least one address bit associated with each of said complete instruction bundles, the

alignment and dispersal circuitry also capable of reordering each of the at least one

complete instruction bundle having the out-of-order alignment so as to align the syllables

in the complete instruction bundle with correct ones of the lanes

~~wherein C, N, S, and L each represents an integer value greater than one~~.

11.   (Previously Presented)   The processing system as set forth in Claim 10

wherein said alignment and dispersal circuitry routes each of said received complete instruction

bundles to said correct execution cluster as a function of at least one address bit associated with

at least one syllable in each of said complete instruction bundles.

12.   (Previously Presented)   The processing system as set forth in Claim 10

wherein said alignment and dispersal circuitry routes each of said received complete instruction

bundles to said correct execution cluster as a function of a cluster bit associated with each of said

complete instruction bundles.

13.   (Previously Presented)   The processing system as set forth in Claim 10

wherein said alignment and dispersal circuitry routes each of said received complete instruction

bundles to said correct execution cluster as a function of a stop bit associated with at least one

syllable in each of said complete instruction bundles.

14.   (Currently Amended)   The processing system as set forth in Claim 10 wherein said alignment and dispersal circuitry comprises multiplexer circuitry capable of routing each of said received complete instruction bundles to any one of said [[C]] execution clusters.

15.   (Original)   The processing system as set forth in Claim 14 wherein said alignment and dispersal circuitry comprises control logic circuitry capable of controlling said multiplexer circuitry.

16.   (Previously Presented)   The processing system as set forth in Claim 15 wherein said control logic circuitry controls said multiplexer circuitry as a function of at least one of:

1) said at least one address bit associated with each of said complete instruction bundles;

2) at least one address bit associated with at least one syllable in each of said complete instruction bundles; and

3) a cluster bit associated with each of said complete instruction bundles.

17.   (Currently Amended)   The processing system as set forth in Claim 10 wherein [[L=4]] each execution pipeline is four lanes wide.

18.   (Currently Amended)   The processing system as set forth in Claim 10 wherein [[C=3]] the data processor comprises three execution units.

19. (Currently Amended) For use in a data processor comprising [[C]] a plurality of execution clusters, each of the [[C]] execution clusters comprising an instruction execution pipeline having [[N]] a plurality of processing stages capable of executing instruction bundles each comprising [[from]] one [[to S]] or more syllables, wherein each of the instruction execution pipelines is [[L]] a plurality of lanes wide, each of the [[L]] lanes capable of receiving one or more of the one to S syllables of the instruction bundles, a method of routing instruction bundles into the [[L]] lanes in the [[C]] execution clusters comprising the steps of:

fetching cache lines from an instruction cache, each of the cache lines comprising [[C*L]] a plurality of the syllables;

issuing complete instruction bundles toward the [[C]] execution clusters, wherein at least one complete instruction bundle is issued having an out-of-order alignment;

reordering each of the at least one complete instruction bundle having the out-of-order alignment so as to align the syllables in the complete instruction bundle with correct ones of the lanes; and

routing each of the received complete instruction bundles to a correct one of the [[C]] execution clusters as a function of at least one of:

1) at least one address bit associated with each of the complete instruction bundles;

2) at least one address bit associated with at least one syllable in each of the complete instruction bundles; and

3) a cluster bit associated with each of the complete instruction bundles [[;]]

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~~wherein C, N, S, and L each represents an integer value greater than one~~.

20.   (Currently Amended)   The method as set forth in Claim 19 wherein [[L=4]] each execution pipeline is four lanes wide and [[C]] the data processor comprises three execution units.

21.   (Currently Amended)   The data processor as set forth in Claim 1, wherein ~~said alignment and dispersal circuitry is further capable of aligning said syllables with correct ones of said lanes~~ each of the execution clusters comprises one or more arithmetic units, a register file, an interface to a memory controller, and an inter-cluster communication interface.

22.   (Currently Amended)   The processing system as set forth in Claim 10, wherein ~~said alignment and dispersal circuitry is further capable of aligning said syllables with correct ones of said lanes~~ each of the execution clusters comprises one or more arithmetic units, a register file, an interface to a memory controller, and an inter-cluster communication interface.